



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,970	03/31/2004	Paul Philip Brown	155-21	5922
22653	7590	01/21/2005	EXAMINER	
EDWARD W CALLAN NO. 705 PMB 452 3830 VALLEY CENTRE DRIVE SAN DIEGO, CA 92130			FONTAINE, MONICA A	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,970

Applicant(s)

BROWN ET AL.

Examiner

Monica A Fontaine

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 5-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 110804.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-4 and 12-15, drawn to a process and apparatus for manufacturing a hollow plastic product, classified in 264/154 and 425/542+.
- II. Claims 5-11, drawn to a process of removing a hollow plastic product, classified in class 264, subclass 335.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because it does not require the means to or steps of closing a threaded end of a molded product. The subcombination has separate utility such as an independent article removal process.

During a telephone conversation with Edward Callan on 3 January 2005 a provisional election was made with oral traverse to prosecute the invention of Group I, claims 1-4 and 12-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butcher et al. (U.S. Patent 4,587,075), in view of Holland et al. (U.S. Patent 3,996,329).

Regarding Claim 1, Butcher et al., hereafter "Butcher," show that it is known to carry out a process of manufacturing a hollow plastic product with two open ends and a substantially tubular section (Abstract), the process comprising the steps of molding a hollow molded plastic part on a mold core part (Column 2, lines 29-45), injecting compressed air into the closed end of the molded part to thereby remove the molded product from the core mold part (Column 3, lines 5-8); and removing at least a portion of the closed end of the molded product to provide the molded product with two open ends and a substantially tubular section (Column 3, lines 24-27). He does not show injection molding material into a mold containing the core mold part. Holland et al., hereafter "Holland," show that it is known to carry out a process of molding a hollow part including providing a cavity mold part with a generally cylindrical portion for forming at least an outside segment of the substantially tubular section of the product (Figures 1, 2); providing a core mold part with a generally cylindrical portion for forming at least an inside segment of the substantially tubular section of the product (Figures 1, 2); combining the cavity mold part with the core mold part to configure a mold cavity for forming a product with one open end, one closed end and a substantially tubular section (Figures 1, 2, 3, element 54); injecting plastic

Art Unit: 1732

material into the mold cavity to form the molded plastic product (Figures 1, 3, element 54); separating the core mold part from the cavity mold part while retaining the molded product on the core mold part (Figure 3D); and injecting compressed air into the closed end of the molded product to thereby at least help remove the molded product from the core mold part (Figure 3E; Column 4, lines 11-15). Holland and Butcher are combinable because they are concerned with a similar technical field, namely, methods of molding hollow articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Holland's injection molding technique to form the molded article of Butcher in order to avoid the need for preforming a sheet of plastic.

Regarding Claim 2, Butcher shows the process as claimed as discussed in the rejection of Claim 1 above, including a method comprising injecting compressed air through the core mold part into the closed end of the molded product (Column 3, lines 5-8; Column 5, lines 66-68; Column 6, lines 1-3), meeting applicant's claim.

Regarding Claim 12, Butcher shows that it is known to have an apparatus for manufacturing a hollow plastic product with two open ends and a substantially tubular section (Abstract), comprising a core mold part with a generally cylindrical portion for forming at least an inside segment of the substantially tubular section of the product (Column 2, lines 30-31); means for injecting compressed air into the closed end of the molded product to thereby at least help remove the molded product from the core mold part (Column 3, lines 5-8; Column 5, lines 66-67); and means for removing at least a portion of the closed end of the molded product to provide the molded product with two open ends and a substantially tubular section (Column 3, lines 24-28). Butcher does not show an apparatus with a mold cavity to be combined with a core

Art Unit: 1732

mold part. Holland shows that it is known to have an apparatus comprising a cavity mold part with a generally cylindrical portion for forming at least an outside segment of the substantially tubular section of the product (Figure 2, element 10); wherein a mold cavity for forming a molded product with one open end, one closed end, and a substantially tubular section is configured when the cavity mold part is combined with the core mold part, and the molded product is formed by injecting plastic material into the cavity (Figures 1, 2); and means for injecting compressed air into the closed end of the molded product to thereby at least help remove the molded product from the core mold part after the core mold part has been separated from the cavity mold part while retaining the molded product on the core mold part (Figure 3D-3E; Column 4, lines 11-15). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Holland's injection molding cavity to form the molded article of Butcher in order to avoid the need for preforming a sheet of plastic.

Regarding Claim 13, Butcher shows the apparatus as claimed as discussed in the rejection of Claim 12 above, including an apparatus wherein the core mold part includes means for channeling compressed air through the core mold part into the closed end of the molded product (Column 3, lines 5-8; Column 5, lines 66-67), meeting applicant's claim.

Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butcher and Holland, as applied to claims 1 and 12, respectively, above, further in view of Zuffa (U.S. Patent 6,736,628).

Regarding Claim 3, Butcher shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show forming a thread portion or using a movable inner core.

Art Unit: 1732

Holland shows that it is known to carry out a method of molding including protracting an inner core to further configure the mold cavity for forming the product (Column 4, lines 18-35), and retracting the inner core subsequent to injection of the plastic (Column 4, lines 18-35). Zuffa shows that it is known to carry out a method of molding including providing a cavity mold part that includes a thread forming portion for forming a thread of the product (Figure 3, element 82), providing a core mold part that includes a movable inner core for forming a portion of the product lying inside the thread when the inner core is protracted (Figure 3, element 9), wherein the separation of the core mold part from the cavity mold part thereby removes the thread from the thread-forming portion of the cavity mold (Figure 3). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Holland's movable core and Zuffa's thread-forming steps during Butcher's molding process in order to form a specifically-shaped molded article.

Regarding Claim 14, Butcher shows the apparatus as claimed as discussed in the rejection of Claim 12 above, but he does not show a movable inner core or means to form a thread portion. Holland shows that it is known have an apparatus wherein the core mold part includes a movable inner core to further configure the mold cavity for forming the product (Column 4, lines 18-35). Zuffa shows that it is known to have an apparatus wherein the cavity mold part includes a thread forming portion for forming a thread of the product (Figure 3, element 82), wherein the core mold part includes a movable inner core for forming a portion of the product lying inside the thread when the inner core is protracted (Figure 3, element 9), wherein the mold cavity for forming the molded product with a thread at the outside of one end of the product is configured when the cavity mold part is combined with the core mold part and the inner core is protracted

Art Unit: 1732

(Figure 4); and means for separating the core mold part from the cavity mold part after the inner core is retracted to thereby remove the thread from the thread-forming portion of the cavity mold part while retaining the molded product on the core mold part (Figure 3; Column 5, lines 46-65).

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Holland's movable core and Zuffa's thread-forming elements in Butcher's molding apparatus in order to form a specifically-shaped molded article.

Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland, in view of Zuffa.

Regarding Claim 4, Holland shows that it is known to carry out a process of manufacturing a hollow plastic product (Abstract), the process comprising the steps of providing a cavity mold part with a generally cylindrical portion for forming at least an outside segment of the substantially tubular section of the product (Figures 1, 2); providing a core mold part with a generally cylindrical portion for forming at least an inside segment of the substantially tubular section of the product and a movable inner core (Figures 1, 2; Column 4, lines 18-35); combining the cavity mold part with the core mold part and protracting the inner core to configure a mold cavity for forming the product (Figures 1, 2; Column 4, lines 18-35); injecting plastic material into the mold cavity to form the molded plastic product (Figure 1); retracting the inner core (Column 4, lines 18-35); and separating the core mold part from the cavity mold part to thereby remove the article from the cavity mold part while retaining the molded product on the core mold part (Figures 1, 2; Column 4, lines 5-17). Holland does not show the formation of threads. Zuffa shows that it is known to carry out a process including providing a cavity mold part with a thread

Art Unit: 1732

forming portion for forming the thread of the product (Figure 3, element 82); providing a core mold part with a portion lying inside the thread (Figure 3, element 9), and separating the core mold part from the cavity mold part to thereby remove the thread from the thread forming portion of the cavity mold part while retaining the molded product on the core mold part (Column 5, lines 46-65). Zuffa and Holland are combinable because they are concerned with a similar technical field, namely, molding processes of forming hollow articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Zuffa's thread forming steps during Holland's molding process in order to form a specifically-shaped molded article.

Regarding Claim 15, Holland shows that it is known to have an apparatus for manufacturing a hollow plastic product (Abstract), the apparatus comprising a cavity mold part with a generally cylindrical portion for forming at least an outside segment of the substantially tubular section of the product (Figures 1, 2); a core mold part with a generally cylindrical portion for forming at least an inside segment of the substantially tubular section of the product and a movable inner core (Figures 1, 2; Column 4, lines 18-35); a mold cavity configured when combining the cavity mold part with the core mold part and retracting the inner core to configure a mold cavity for forming the product, and the molded product is formed by injecting plastic material into the mold cavity (Figures 1, 2; Column 4, lines 18-35); and means for separating the core mold part from the cavity mold part to thereby remove the article from the cavity mold part while retaining the molded product on the core mold part (Figures 1, 2; Column 4, lines 5-17). Holland does not show the formation of threads. Zuffa shows that it is known to have an apparatus including a cavity mold part with a thread forming portion for forming the

Art Unit: 1732

thread of the product (Figure 3, element 82); a core mold part with a portion lying inside the thread (Figure 3, element 9), and means for separating the core mold part from the cavity mold part to thereby remove the thread from the thread forming portion of the cavity mold part while retaining the molded product on the core mold part (Column 5, lines 46-65). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Zuffa's thread forming elements in Holland's molding apparatus in order to form a specifically-shaped molded article.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with regard to forming hollow articles, in general:

U.S. Patent 4,632,657 to Potoczky

U.S. Patent 4,796,766 to Clark

U.S. Patent 5,342,301 to Saab

U.S. Patent 5,661,889 to Valyi

U.S. Patent 6,062,408 to Beck et al.

U.S. Patent 6,210,624 to Mayer

U.S. Patent 6,237,791 to Beck et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

Art Unit: 1732

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maf

January 11, 2005



MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER